

# THE WARBLER

## AN EDUCATIONAL WEEKLY

ISSUE

103

MARCH 30, 2022

### Dear Student, Artist, Thinker,

According to a study done by the A.C. Nielsen Company, an individual will spend an average of 9 years of their life watching television. Many times people are pulled in by the various characters, storylines, and adventures that their favorite drama or soap opera offers, but what is television really? Beyond the countless shows, movies, sitcoms, and news programs, what do we really know? Television is a way of sending and receiving moving images and sounds through wires or airwaves by electrical impulses. The word television, which is commonly just referred to as TV, simply means “seeing from a distance”. In most of our lives, we have never known a world without television. It is hard to pin down an exact date of when the TV was created, but many think that the experimentation started in the mid-19<sup>th</sup> century. It is even harder to accredit a single person with inventing the TV. The television was truly an innovation that hinged off many scientific contributions combined. John Loggie Baird, a Scottish amateur scientist, successfully transmitted still pictures onto the first TV prototype in 1878. Many years and inventions later, Ferdinand Braun invented the cathode ray tube in 1897. Vladimir Zworykin improved television with the invention of the completely electronic camera, which made it easier to capture and translate TV footage.

The long history of how the television was invented shows how something so commonplace actually took years of innovation from countless people. These scientists building off one another’s work to create something that is continually evolving is a prime example of the importance of sharing ideas and looking for ways to better existing systems. If individuals in the 19th century settled for live performances being the only possible form of entertainment we could engage in, the television would not exist at all. We can all take the story of how television was created as an inspiration to not look at the things around us for what they are, but rather what they could be. Scientist and inventors are still working on ways to advance the TV and now have been able to even make portable phones into tiny television screens. In the coming years many predict that virtual reality will become a common way to watch television. Virtual reality is a system that makes one feel as if they are in the setting of whatever they are watching. Whether or not virtual reality will truly be accessible in the upcoming years is questionable, however, the ability of humans to continue to use creativity to innovate is inevitable. In the words of Theodore Levitt, “Creativity is thinking up new things. Innovation is doing new things.” We hope you enjoy learning about the history, psychology, and more behind the television in this edition of *The Warbler*.

*Katie and the APAEP Team*

“And I believe that good journalism, good television can make our world a better place.”

CHRISTIANE AMANPOUR // British-Iranian TV host



ALABAMA PRISON ARTS + EDUCATION PROJECT

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### WORDS INSIDE

FOUND INSIDE “HOW TELEVISION SHOWS GET MADE”  
**truncated** | Shortened in duration or extent

FOUND INSIDE “WHO INVENTED TELEVISION?”  
**disseminate** | Spread (something, especially information) widely

**telegenic** | Having an appearance or manner that is appealing on television

FOUND INSIDE “WHAT’S THE FUTURE OF TV?”  
**equestrians** | A rider or performer on horseback

**diluted** | Lessen in force or effect

## BUSINESS

# How Television Shows Get Made

BY ALEX HARVEY-GURR | *Christopherring.com* | December 21, 2018

Pilots are the tip of the spear in the television industry. The first episode of most television series, determines if that show is on the air for five seasons, or fades into history after the third episode.

Even though more shows are going straight-to-series, much of the show's success still rides on a great pilot. This is why so much time, energy, and money goes into making these pilots.

Let's look at the process of making a TV pilot.

## STEP 0 | Getting The Pilot Script Picked Up

Before a creative project is a pilot, it's a pitch.

To go from pitch to pilot, the pitch needs a "greenlight" — a "yes" to an idea from the studio and/or network. The first step in getting a greenlight is selling a pitch.

If the execs like what they hear, they buy your pitch. But there's no time to celebrate, because after they buy it directors need to finish step two in getting that greenlight, which is delivering them a pilot script.

And not just any script: one that both the studio and network like.

If the pitch was a sketch of an idea, then the script is the painting: colored in, fully formed and framed. The process of creating this painting is often a harrowing one, aptly referred to as "development hell" in the industry.

Why? Because the execs didn't have any input on your pitch idea. That was then, though. Now executives give notes based on their perspectives as the network and studio, e.g. the business perspective (versus a purely creative/artistic one).

It's the writer's job to deliver script rewrites that strike the delicate balance between incorporating notes and maintaining the creative integrity of the story. Which can be tricky.

When everyone agrees the script is ready, it's sent to the top network execs to read.

## STEP 1 | Put Together The Creative Elements

Christmas came late: the network decided to pick up your script and order it to pilot. Again, no time to celebrate, because you need to get the ball rolling on making your pilot.

After getting greenlit, the next step for creatives working on pilots is to put together their team and begin casting. Unfortunately, most of Hollywood is doing that same exact thing at the exact same time. It becomes a race to get first, second, or even third choice for roles, while Business Affairs negotiates contracts for all players.

Since statistically most shows fail and lose money, networks and studios look for ways to minimize their downside. One go-to strategy is to make a pilot pick-up "cast contingent," meaning a network will only release enough money to fund casting. If an acceptable cast isn't found, the project is tabled and no more money is spent.

## STEP 2 | Shoot It

The length of a shoot depends on the show. Multicam comedy pilots shot on a sound stage may take only a few days; single-cam pilots, on the other hand, may shoot for weeks or more (for example, the massive 2-hour *LOST* pilot took two-and-a-half months to shoot.)

Meanwhile, writers continue reworking the script based on notes made by the cast and team, and sometimes even recasting.

Even at this stage, the studio or network can take further steps to minimize their downside if they aren't confident in the project. Instead of shooting a "full pilot," they can shoot low-budget pilots or "proof of concept" presentations instead. With these, only a truncated script is shot and borrowed sets are used, to cut down on expenses.

This gives the network an idea of what the full pilot would look like without a major investment (and major risk).

## STEP 3 | Edit

Once the pilot is shot and in the can, it goes through the editing process. A pilot typically goes through a series of cuts by the director, showrunner, and studio before it's turned in to the network. Many networks then run the pilot through various screenings and marketing tests. Another cut is then usually produced based on this data.

## STEP 4 | Series Order Or Bust

Once the pilot is in the network's hands, all that's left to do is wait in creative purgatory while the network decides whether or not to order your show to series.

Pilots are viewed en masse a few weeks before the May upfront presentations, and then the orders are made.

A handful of pilots get series orders. The rest don't. ●



Equipment used for editing in a studio

● Edited for space and clarity

## ENTERTAINMENT

# Things That Really Happened on the Sets of Children's TV Show

BY NICHOLAS CONLEY | *Grunge* | September 21, 2018

You really have to hand it to the people who put on live-action kid's TV shows for a living: it's a crazy amount of work. Day after day, week after week, these people have got to come up with new ideas, hammer out scripts, film the whole shebang, and all the while make sure everything they're putting out there is appropriate and at least somewhat educational for the millions of kids watching.

But sometimes, things go horribly wrong. Actors say the wrong lines, somebody slips on a banana peel, animals act up, someone behind the scenes does something really weird — there are all kinds of accidents that can happen. Here are some of the most bizarre things that have really occurred behind the scenes of some of your favorite children's TV shows from back in the day.

**Sesame Street** | Everyone loves Julia Louis-Dreyfus. How could anyone not? One of the *Seinfeld* star's most relatable moments of all time, however, happened when she was filming an episode of *Sesame Street*, and she slipped out the S-word. It's a total accident, exactly the kind that could happen to anyone.

To Louis-Dreyfus's credit, she immediately caught herself right after saying it — but so did Elmo, and the little red furry guy responded to her blooper by turning to the camera and exclaiming, "She said a bad word!" Elmo seemed fine with this mistake, though, provided that she at least put a fiver in the swear jar. She responded to Elmo's pushiness by remarking, "You're gonna be a rich Muppet at the end of this day."

**Barney** | We all remember Barney, the purple dinosaur who just wanted to give everyone a hug. David Joyner, the spiritual actor/engineer/musician/massage therapist who brought Barney to life, told the story of an accident that happened while he was in the suit.

Every year, the *Barney* production would put on a big show at the annual Easter Egg Roll at the White House. Joyner says that one year, the city got badly rained on before the performance. Luckily, the rain cleared up right as Joyner was getting ready to perform. The crew wiped off the stage and figured the coast was clear, Joyner suited up, and production moved forward as usual. However, the carpeted ramp leading up to the stage was still soaking wet. Because the show was prerecorded, Joyner had a limited time to run onto the stage before Barney's voice greeted the giant audience



Photo from  
cinemablend.com

of kids. So the show began, Barney raced up the wet ramp ... and his feet slipped out from underneath him.

"It was a Monty Python fall," Joyner said. "Barney's fully in the air, feet are up, then it's like BAM, right to the ground." The audience gasped. Despite the colossal fall, Joyner managed to spring back to his feet right before Barney's voice started blasting from the speakers. Now that's dedication.

**Batman (1966)** | Though grimmer interpretations of the Dark Knight more faithful to the comics have since supplanted the 1966 Batman show in the public consciousness, the reputation of this gloriously cheesy series has nonetheless filtered down through generations of Bat-fans. Adam West and Burt Ward made Batman and Robin into cultural icons. Even today, every kid knows the classic "Na-na-na-na-na-na-na-na Batman!" theme, and West's "Batusi" dance is a YouTube legend.

Today, most viewers have some passing familiarity with the show's classic two-episode structure: Part I would end with Robin dangling from some kind of death trap, and Part II would show Batman saving him. Obviously, all those supervillains didn't care about the Boy Wonder's safety.

Burt Ward was only 19 when he was cast as Robin. The actor stated that because Ward's stuntman didn't resemble him enough, he ended up doing most of his own stunts, saying "I was the one going to the emergency room with third-degree burns and 2-by-4s landing on my head." He said he considers himself "very lucky to have survived with so little physical damage." Ward went to the emergency room on four of his first five days of shooting, with one stunt nearly throwing him out of the Batmobile at 55 mph. Ward survived, and he enjoys telling stories about these crime-fighting accidents to this day. ●

"I think that's one of the most important gifts we have in television — the ability to heal through laughter."

**SOLEIL MOON FRYE**  
// Actress, director,  
screenwriter

● Edited for  
space and clarity

## MATHEMATICS

## Sudoku

#205 PUZZLE NO. 9767920

9		6						3
					3			
					4		6	7
		2			8			
			5	1		8		
	9	8				5	7	
3							8	
		4		5	2			
	5			9		2		

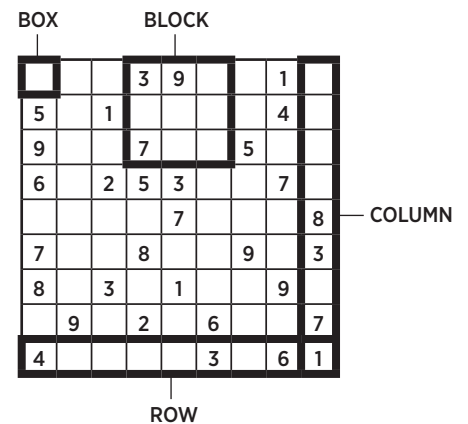
#206 PUZZLE NO. 4761553

					2		5	
6		3	4		7			
2	9		8					
	3						1	5
7			9					
	5				3	7	4	
					6			1
						4		
	4			1			9	

©Sudoku.cool

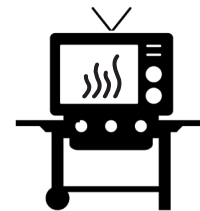
## SUDOKU HOW-TO GUIDE

1. Each block, row, and column must contain the numbers 1-9.
2. Sudoku is a game of logic and reasoning, so you should not need to guess.
3. Don't repeat numbers within each block, row, or column.
4. Use the process of elimination to figure out the correct placement of numbers in each box.
5. The answers appear on the last page of this newsletter.



What the example will look like solved 📺

2	4	8	3	9	5	7	1	6
5	7	1	6	2	8	3	4	9
9	3	6	7	4	1	5	8	2
6	8	2	5	3	9	1	7	4
3	5	9	1	7	4	6	2	8
7	1	4	8	6	2	9	5	3
8	6	3	4	1	7	2	9	5
1	9	5	2	8	6	4	3	7
4	2	7	9	5	3	8	6	1



“Television: A medium.  
So called because it’s neither  
rare nor well done.”

ERNIE KOVACS // American comedian



## DID YOU KNOW?

**TV technology** existed before commercial radio

Almost all of the first major television networks — NBC, ABC, and CBS — still exist today, but there was another **early pioneer**, the DuMont Television Network, that's been lost to the annals of TV history. The second network to get off the ground, DuMont only existed from 1942 to 1956, but made some pretty major contributions to the industry.

Ever since color TV made its commercial debut in the 1960s, scholars have debated the effects it has on **our dreams**. While studies differ, most find that individuals who grew up on black-and-white TV or are primarily exposed to black-and-white TV, are more likely to dream in grayscale. Meanwhile, individuals who watch color TV dream in color the vast majority of the time.

The world's **first TV commercial**, an advertisement for Bulova watches, aired before a Brooklyn Dodgers and Philadelphia Phillies baseball game on July 1, 1941.

Congress passed an act in 1996 that mandated that the television industry create a **rating system** that would help viewers determine what audience a show was intended for.

In 2014, Alex Trebek, the host of Jeopardy! set a world record for the most episodes of a **game show** hosted by the same presenter.



Real Welders

Welders.... if there were a TV Series named "Chicago Welding"

## Idiom

## “Breaking news”

**Meaning** Newly received information about an event that is currently occurring or developing

**Origin** There are many theories for the term's origin. The Oxford English Dictionary (OED) first finds breaking news in an 1877 edition of Illinois's Sterling Daily Gazette and late-breaking news in a 1925 edition of Wisconsin's Appleton Post-Crescent. For a story to break, or “become public or available,” emerges by the 1930s and fast-breaking news by the 1940s.

Closely related, is to break a story or break news. Here, to break means “to reveal” or “disclose.” Journalistically, to break a story appears by the early 1900s. To break news — usually of a sensitive nature, as in “I hate to break the news to you” — emerges by the 1840s.

Source: <https://mashedradish.com/2017/05/23/why-does-news-break/>



IN 1950, THE ZENITH RADIO CORPORATION RELEASED THE **FIRST REMOTE CONTROL**. CONNECTED TO THE TV SET BY A BULKY CORD, THE REMOTE COULD CHANGE CHANNELS AND TURN THE TV ON AND OFF. UNFORTUNATELY, IT DIDN'T END UP BEING A HIT WITH CONSUMERS WHO COMPLAINED THAT THEY WOUND UP TRIPPING OVER THE CORD FAR TOO OFTEN.



THE MOST-WATCHED TV EVENT OF ALL TIME (IN THE UNITED STATES) WAS **SUPER BOWL XLIX**, A SHOWDOWN BETWEEN THE NEW ENGLAND PATRIOTS AND THE SEATTLE SEAHAWKS, WHICH DREW IN 114.4 MILLION VIEWERS.

Source: <https://stacker.com>



## ART + CULTURE

# The Man Who Never Heard of Frank Sinatra

BY AARON FOGEL

The man who had never heard of Frank Sinatra: he lived  
A perfectly ordinary life in America. Born in 1915,  
He followed all the fads, read the newspapers, listened

To Television, knew who Dean Martin and Sammy whathisname  
Were (Sinatra's friends), but somehow, by a one in a  
Zillion fluke, whenever Sinatra came up, he was out of the room.

Or his attention was diverted by something else, and  
(You will say this is impossible, that it cannot be), never  
Heard him sing, like a man in my generation who somehow

Missed the Beatles though he had heard everything else.  
Once, just as he was about to hear the name Frank Sinatra  
A plane flew overhead—he was fifty-five years old—his hearing

A little more impaired. He had heard of Humphrey Bogart,  
Of Elizabeth Taylor, of Walter Cronkite, and of perhaps a hundred  
Forty thousand other celebrities names by the time he died,

And yet he had never heard of Frank Sinatra. The Greeks had  
That famous saying, "The luckiest man is he who was never born."  
Which is kind of gloomy, but I think they were wrong.

The luckiest man is he who never heard of Frank Sinatra.

## WRITING PROMPT

In this poem, Fogel looks at the life of a person through the fact that they have never heard of popular singer Frank Sinatra. Frank Sinatra is known as one of the greatest musicians of the 20th century and produced hits such as "Fly Me to the Moon." Because of this, Fogel says that the man in the poem not knowing Frank Sinatra should be one of his greatest life accomplishments. He says this to highlight the importance of one creating their own opinions rather than just following popular culture. Think of one trend, artist, movie, or other form of media that has become popular during your lifetime that you don't understand or agree with. Contemplate an interesting way to describe this trend and how it became popular or why you disagree with it. Use the study of your chosen trend and your thoughts of it as inspiration for a poem, short story, or creative non-fiction essay.

Aaron Fogel, New York City native, graduated from both Cambridge and Columbia, where he got his doctorate. He currently teaches at Boston University and has since 1978. He is 75 years old and was born in 1947. Fogel has printed three collections of poetry and has been awarded the Kahn Award, the Guggenheim Fellow, and Kellett Fellowship.

LUCKIEST  
GENERATION  
TELEVISION  
FAMOUS

FADS  
BEATLES  
ORDINARY  
SINATRA

DIVERTED  
ZILLION  
FLUKE  
CELEBRITIES

## Word Search

A	F	S	E	F	I	O	C	S	S	N	S	I	R
A	I	U	A	L	U	C	K	I	E	S	T	F	R
T	E	D	E	E	K	U	L	F	M	T	T	N	T
U	S	A	E	A	M	S	E	V	N	E	L	T	I
E	T	S	U	A	R	T	A	N	I	S	F	E	D
G	E	N	E	R	A	T	I	O	N	I	A	L	E
L	D	D	E	S	E	C	S	O	E	I	M	E	T
O	I	T	T	I	D	I	L	L	S	D	O	V	R
S	E	L	T	A	E	B	S	A	I	E	U	I	E
S	S	L	N	T	L	G	I	E	T	I	S	S	V
E	D	K	O	R	D	I	N	A	R	Y	S	I	I
N	N	O	I	L	L	I	Z	M	I	B	N	O	D
I	I	A	D	G	U	N	T	T	A	T	I	N	E
S	E	I	T	I	R	B	E	L	E	C	T	L	L

## TECHNOLOGY

# What's the Future of TV?

BY BLAKE MORGAN | *Forbes* | November 2, 2021

Decades ago, families would gather around the TV at the same time every week to watch a show together. Now, TV is available on the go—streaming on smartphones and tablets so that viewers can watch their favorite shows anytime, anywhere.

The evolution of TV will intensify in coming years. With new technology and a push towards new forms of entertainment, TV will continue to transform into a personalized experience unlike anything we've ever seen.

## Rise Of Streaming And On-Demand

What sets the scene for every other change to the future of TV is the growth of streaming and on-demand services. Customers will no longer wait around for their show to air at a certain time, but instead will be able to watch what they want, when they want.

The switch to streaming is the catalyst for many changes. To start, streaming removes the middlemen of movie theaters or cable system operators and connects customers directly with entertainment companies. Streaming and on-demand allow customers to watch whatever they want, whenever they want. The flexibility of schedule and device opens doors to consumers and gives them power over their TV viewing. Streaming services also tend to be less expensive than traditional cable subscriptions, which is a huge draw for consumers.

However, the rise of streaming is overwhelming to many consumers, with nearly 50% of consumers saying they are frustrated by the growing number of subscription services required to watch the content they want. As more streaming services enter the market and the libraries become diluted, consumers will have to subscribe to multiple services, which can lead to higher spending and hurt the overall experience.

On average, Americans subscribe to three paid streaming services, spending an average of \$37 per month. That's a huge jump from just three years ago, when the majority of Americans only paid for one streaming service, which was almost always Netflix. In the future, expect both the number of services and the total cost per customer to increase.

## Interactive Content

Future TV will be an immersive experience for viewers. Instead of simply watching something happen on their screens, viewers will participate in the show and have a chance to interact and potentially impact the outcome of the show.

Virtual reality will allow viewers to step into a show and watch as if they are there themselves. Facebook, Google and Microsoft, among other companies, have developed VR technology that will become mainstream in coming years. With VR glasses, viewers could virtually transport themselves into any show, which opens up a new world of possibilities for marketers and entertainment companies.

Netflix has already experimented with interactive content, including an episode of *Black Mirror* where users' choices affected the dialogue and plot. Similarly, the Netflix show *You Vs. Wild* acts as a choose your own adventure-type show where viewers are given options to shape their journey and affect potential endings. *Love, Death & Robots* experiments by playing episodes in a different order for different users.

The future of TV will also be shoppable, as demonstrated by Amazon Prime's *Making the Cut*. Each week, designs from the fashion competition were immediately available for purchase, and viewers could buy the looks instantly while watching the show. Similar concepts will expand to other shows and make it possible for viewers to interact with and shop from shows right in the moment.

## Original Content With Limited Restrictions

The streaming wars are heating up and creating a bidding battle to get popular content, including *Seinfeld* and *The Office*. To avoid battles over the rights to popular shows, many streaming services are now creating their own content. In 2019, Netflix spent an estimated \$15 billion, or 85% of its total spending, on original content. Apple TV+ committed \$6 billion to original content before it launched its streaming service, and Disney Plus spent \$1 billion on original content in 2020.

Original content gives streaming services more control over what is in their library, allowing them to create niche content and increase representation of minorities. Most original content isn't subject to the same regulations as broadcast TV, which means streaming service original content isn't limited by language or content guidelines.

We're well on our way to the future of TV. With changes in viewer preferences and new technology, especially driven by the growth of streaming services, TV will soon be nearly unrecognizable from what it was just a few decades ago. ●

“The day that I saw Whoopi Goldberg on television, I cried so hard because I kept looking at my daddy and going ‘Oh my God. There’s somebody on TV that looks like me! She looks like me! Yay! I can be on TV! I can be on TV! Look at her — look at her! She looks just like me.’”

LESLIE JONES //  
American comedian  
and actress

✎ Edited for  
space and clarity



## FEATURE

# Who Invented Television?

BY SARAH PRUITT | *History.com* | June 29, 2021

The way people watch television has changed dramatically since the medium first burst onto the scene in the 1940s and '50s and forever transformed American life. Decade after decade, TV technology has steadily advanced: Color arrived in the 1960s, followed by cable in the '70s, VCRs in the '80s and high-definition in the late '90s. In the 21st century, viewers are just as likely to watch shows on cell phones, laptops and tablets as on a TV set. Amazingly, however, all these technological changes were essentially just improvements on a basic system that has worked since the late 1930s — with roots reaching even further back than that.

## Early TV Technology | Mechanical Spinning Discs

No single inventor deserves credit for the television. The idea was floating around long before the technology existed to make it happen, and many scientists and engineers made contributions that built on each other to eventually produce what we know as TV today.

Television's origins can be traced to the 1830s and '40s, when Samuel F.B. Morse developed the telegraph, the system of sending messages (translated into beeping sounds) along wires. Another important step forward came in 1876 in the form of Alexander Graham Bell's telephone, which allowed the human voice to travel through wires over long distances.

Both Bell and Thomas Edison speculated about the possibility of telephone-like devices that could transmit images as well as sounds. But it was a German researcher who took the next important step toward developing the technology that made television possible. In 1884, Paul Nipkow came up with a system of sending images through wires via spinning discs. He called it the electric telescope, but it was essentially an early form of mechanical television.

## TV Goes Electronic With Cathode Ray Tubes

In the early 1900s, both Russian physicist Boris Rosing and Scottish engineer Alan Archibald Campbell-Swinton worked independently to improve on Nipkow's system by replacing the spinning discs with cathode ray tubes, a technology developed earlier by German physicist Karl Braun. Swinton's system, which placed cathode ray tubes inside the camera that sent a picture, as well as inside the receiver, was essentially the earliest all-electronic television system.

Russian-born engineer Vladimir Zworykin had worked as Rosing's assistant before both of them

emigrated following the Russian Revolution. In 1923, Zworykin was employed at the Pittsburgh-based manufacturing company Westinghouse when he applied for his first television patent, for the "Iconoscope," which used cathode ray tubes to transmit images.

Meanwhile, Scottish engineer John Baird gave the world's first demonstration of true television before 50 scientists in central London in 1927. With his new invention, Baird formed the Baird Television Development Company, and in 1928 it achieved the first transatlantic television transmission between London and New York and the first transmission to a ship in mid-Atlantic. Baird is also credited with giving the first demonstration of both color and stereoscopic television.

In 1929, Zworykin demonstrated his all-electronic television system at a convention of radio engineers. In the audience was David Sarnoff, an executive at Radio Corporation of America (RCA), the nation's biggest communications company at the time. Born into a poor Jewish family in Minsk, Russia, Sarnoff had come to New York City as a child and began his career as a telegraph operator. He was actually on duty on the night of the Titanic disaster; although he likely didn't — as he later claimed — coordinate distress messages sent to nearby ships, he did help disseminate the names of the survivors.

## Utah Inventor Battles Giant Corporation

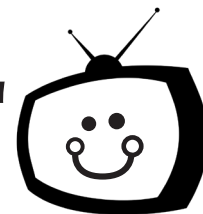
Sarnoff was among the earliest to see that television, like radio, had enormous potential as a medium for entertainment as well as communication. Named president of RCA in 1930, he hired Zworykin to develop and improve television technology for the company. Meanwhile, an American inventor named Philo Farnsworth had been working on his own television system. Farnsworth, who grew up on a farm in Utah, reportedly came up with his big idea — a vacuum tube that could dissect images into lines, transmit those lines and turn them back into images—while still a teenager in chemistry class.



April 30, 1939, New York City: This is the scene viewed on the television receivers in the metropolitan area, as the National Broadcasting Company inaugurated the first regular television service to the American public telecasting the ceremonies marking the opening of the New York World's Fair. Later, viewers heard and saw President Roosevelt proclaim the fair open.

Bettmann via  
Getty Images





## RANDOM-NEST

## How TVs Work

BY NICKY LAMARCO | CHRON | March 16, 2019

In 1927, at the age of 21, Farnsworth completed the prototype of the first working fully electronic TV system, based on this “image dissector.” He soon found himself embroiled in a long legal battle with RCA, which claimed Zworykin’s 1923 patent took priority over Farnsworth’s inventions. The U.S. Patent Office ruled in favor of Farnsworth in 1934 (helped in part by an old high school teacher, who had kept a key drawing by the young inventor), and Sarnoff was eventually forced to pay Farnsworth \$1 million in licensing fees. Though viewed by many historians as the true father of television, Farnsworth never earned much more from his invention, and was dogged by patent appeal lawsuits from RCA. He later moved on to other fields of research, including nuclear fission, and died in debt in 1971.

Sarnoff, with his company’s marketing might, introduced the public to television in a big way at the World’s Fair in New York City in 1939. Under the umbrella of RCA’s broadcasting division, the National Broadcasting Company (NBC), Sarnoff broadcast the fair’s opening ceremonies, including a speech by President Franklin D. Roosevelt.

## The Rise of a New Medium

By 1940, there were only a few hundred televisions in use in the United States. With radio still dominating the airwaves—more than 80 percent of American homes owned one at the time—TV use grew slowly over the course of the decade, and by the mid-1940s, the United States had 23 television stations (and counting). By 1949, a year after the debut of the hit variety show *Texaco Star Theater*, hosted by comedian Milton Berle, the nation boasted 1 million TV sets in use.

By the 1950s, television had truly entered the mainstream, with more than half of all American homes owning TV sets by 1955. As the number of consumers expanded, new stations were created and more programs broadcast, and by the end of that decade TV had replaced radio as the main source of home entertainment in the United States. During the 1960 presidential election, the young, handsome John F. Kennedy had a noticeable advantage over his less telegenic opponent, Richard M. Nixon in televised debates, and his victory that fall would bring home for many Americans the transformative impact of the medium. ●

## HOW DOES A PLASMA TV WORK?

While plasma televisions were once quite popular and many of the ones owned by users still use this technology, they are no longer manufactured and have been replaced by OLED televisions.

In a plasma television, little cells of noble gases, usually Neon and Xenon, are excited and get into a supercharged state known as the plasma state. In this state, the subatomic components of these gases emit ultraviolet light. There are parts inside those cells that absorb this ultraviolet light and then re-emit it as light in the visible spectrum. That is what you eventually see as the viewer of the television.

## HOW LCD TELEVISIONS WORK

LCD stands for Liquid Crystal Display. Here, there are three components to such a television. There is a liquid crystal display and a light source at its back known as a backlight. There is also a light diffuser between the two that helps to make the light coming to the screen more uniform.

The liquid crystal display acts as some kind of filter. It blocks light in each pixel by applying and controlling an electric field to each pixel. For black to be displayed, the light will be completely blocked while white means all the light will be let through. The fact that the display is a filter means that blacks won’t be true blacks. A portion of light will always find its way through the filter.

## HOW LED TELEVISIONS WORK

While LED televisions are often touted as a major innovation and a new kind of television, they are no more than a special kind of LCD television where the backlight is made of LEDs. In terms of picture quality, there is absolutely no difference.

To be sure, engineers have tried to design full-fledged LED televisions, where the screen itself is made of LEDs. In these televisions, the panel isn’t liquid crystal but instead has pixels consisting of LEDs. Each pixel has 3 individual LEDs; red, green, and blue. Such televisions are of much better quality than LCD televisions.

However, they are also significantly more expensive to manufacture. Similar technology is being used to make OLED televisions, which are trying to look into organic light emitting diodes rather than artificial ones. They are still the most expensive televisions out there, but there are hopes that they will become more affordable for the masses with time.

PANTS	NOW IN HERE	EV	EN
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**WORD PLAY** A Rebus puzzle is a picture representation of a common word or phrase. How the letters/images appear within each box will give you clues to the answer! For example, if you saw the letters “LOOK ULEAP,” you could guess that the phrase is “Look before you leap.”  
*Answers are on the last page!*

HOW  
TO  
DRAW

...



**BIG BIRD** first appeared on *Sesame Street* in 1969 and is 8 feet 2 inches tall.



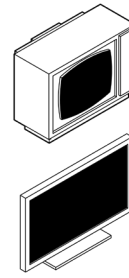
## WORDS OF ENCOURAGEMENT

Television is something that can either improve our lives through awareness and amusement, or it can be overly consuming. In the same sense, what other people tell you about yourself can help you learn or misguide you. Now I'm not saying don't listen to what anyone says because that would be foolish, but what I am saying is that you are the ultimate authority in your intellectual and spiritual development. What people can offer is their perspective, which can be equally valuable as your own. Focus on what matters to you, and tune out (haha, get it, tune out, like on the TV ... \*sigh\*) the noise. Stay focused on what matters to you, and we're prepared to support you every step of the way. We hope you have enjoyed this edition of *The Warbler* — have a great week!

Taylor



1061 Beard-Eaves Memorial Coliseum // Auburn University, AL 36849



"When we started in television, there was that magic box in the corner of the room, and 'Oh my gosh — look what it's doing'"

BETTY WHITE // American actress

## Answers

SUDOKU #205

9	8	6	1	7	5	4	2	3
1	4	7	6	2	3	9	5	8
2	3	5	9	8	4	1	6	7
5	1	2	7	4	8	3	9	6
7	6	3	5	1	9	8	4	2
4	9	8	2	3	6	5	7	1
3	2	9	4	6	1	7	8	5
8	7	4	3	5	2	6	1	9
6	5	1	8	9	7	2	3	4

SUDOKU #206

4	7	1	6	9	2	8	5	3
6	8	3	4	5	7	1	2	9
2	9	5	8	3	1	6	7	4
8	3	6	2	7	4	9	1	5
7	1	4	9	8	5	3	6	2
9	5	2	1	6	3	7	4	8
3	2	9	7	4	6	5	8	1
1	6	8	5	2	9	4	3	7
5	4	7	3	1	8	2	9	6



## Rebus Puzzle

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1. Ants in the pants
2. In the middle of nowhere
3. Break even

Send ideas and comments to:

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UNTIL NEXT TIME 